

may be required, or credit any overpayment to Deposit Account No. 06-1300 (Our Order No. A-64558-1/RFT/RMS/RMK).

An Appendix of Pending Claims is attached for the Examiner's convenience.

Please amend the above-identified application as follows:

In the Claims:

Please cancel Claims 1-18 without prejudice or disclaimer.

19. (Twice Amended) An apparatus for the detection of target nucleic acids in a test sample, comprising:

- a) a test chamber comprising a first and a second [measuring] electrode, wherein said first [measuring] electrode comprises a single stranded nucleic acid covalently attached to said electrode via a spacer, wherein said electrode further comprises a passivation agent monolayer [conductive oligomer, wherein said conductive oligomer is also covalently attached to a single stranded nucleic acid]; and
- b) an AC/DC voltage source electrically connected to said test chamber.

20. (Twice Amended) An apparatus for the detection of target nucleic acids in a test sample, comprising:

- a) a test chamber comprising a first and a second [measuring] electrode, wherein said first [measuring] electrode comprises a covalently attached single stranded nucleic acid, wherein said electrode further comprises a passivation agent monolayer and wherein said nucleic acid further comprises a covalently attached second electron transfer moiety; and
- b) an AC/DC voltage source electrically connected to said test chamber.

Sub D2

C1

Sub F1

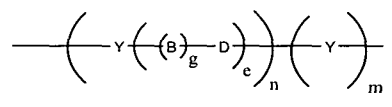
1060

C

C25 23. (Twice Amended) An apparatus according to claim 20, wherein said single stranded nucleic acid[s are] is covalently attached to said first [measuring] electrode via a spacer.

9 24. (Twice Amended) An apparatus according to claim 19, 23 [24] or 27 [28], wherein said spacer is a conductive oligomer [has] having the formula:

C3
11070



wherein

Y is an aromatic group;

n is an integer from 1 to 50;

g is either 1 or zero;

e is an integer from zero to 10; and

m is zero or 1;

wherein when g is 1, B-D comprises two atoms forming a bond able to conjugate with neighboring bonds; and

wherein when g is zero, e is 1 and D is selected from the group consisting of carbonyl and a heteroatom moiety, wherein the heteroatom is selected from oxygen, sulfur, nitrogen and phosphorus.

3
C4
SubF2

26. (Amended) An apparatus for the detection of target nucleic acids in a test sample, comprising:

- a) a test chamber comprising a first and a second [measuring] electrode, wherein said first [measuring] electrode comprises a covalently attached first single stranded nucleic acid and a passivation agent monolayer;

107

C

b) a second nucleic acid [comprising a] covalently attached to an electron transfer moiety; and

c) an AC/DC voltage source electrically connected to said test chamber.

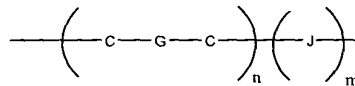
C4
cont
7

3
8

27. (Amended) An apparatus according to claim 26 wherein said single stranded nucleic acid[s are] is covalently attached to said electrode via a spacer.

18/30. (Amended) An apparatus according to claim 19, 23 [24] or 27 [28], wherein said spacer is a conductive oligomer having [has] the formula:

C11080
C5



wherein

C are carbon atoms;

n is an integer from 1 to 50;

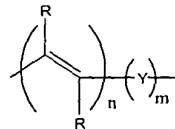
m is 0 or 1;

J is a heteroatom selected from the group consisting of nitrogen, silicon, phosphorus, sulfur, carbonyl and sulfoxide; and

G is a bond selected from single, double and triple bonds.

13/31. (Amended) An apparatus according to claim 19, 23 [24] or 27 [28], wherein said spacer is a conductive oligomer having [has] the formula:

T1081



wherein

108

C

C5
CONT

n is an integer from 1 to 50;

m is either zero or 1;

Y is an aromatic group; and

R is a substitution group.

Please cancel claim 32 without prejudice or disclaimer.

C6

~~14~~ 33. (Amended) An apparatus according to claim ~~19, 20 or 26~~^{19, 20 or 26} [32] wherein said passivation agent monolayer comprises conductive oligomers.

~~15~~ 34. (Amended) An apparatus according to claim ~~19, 20 or 26~~^{19, 20 or 26} [32] wherein said passivation agent monolayer comprises insulators.

Please add the following new claims:

~~sub E1~~
C7

~~-35. An apparatus for the detection of target nucleic acids in a test sample, comprising:
a) a test chamber comprising an array of electrodes, each electrode comprising a covalently attached single stranded nucleic acid and a passivation agent monolayer; and
b) an AC/DC voltage source electrically connected to said test chamber.~~

~~17~~ 36. An apparatus according to claim ~~35~~¹⁶ wherein at least one of said single stranded nucleic acids is attached to said electrode via a spacer.

~~18~~ 37. An apparatus according to claim ~~36~~¹⁶ wherein said spacer is an insulator.